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## Bangladesh

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### Food Processing Industries in Bangladesh

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**Report Highlights:**

The food processing sector in Bangladesh is a \$2.2 billion industry that grew on average 7.7 percent per annum between fiscal years 2004/05 and 2010/11, responding to growth of the Bangladeshi middle class over the same period. The beverage industry more than doubled during the same period to \$29 million, showing an average growth rate exceeding 8 percent per annum. Though small in relation to population, the food processing sector is thus growing rapidly.

## Executive Summary:

Though classified as a low-income country, Bangladesh is growing fast and aspires to middle-income status by 2021, the 50<sup>th</sup> anniversary of its independence. With economic growth of 8 percent per annum, the \$2.2 billion food processing sector in Bangladesh grew on average 7.7 percent per annum between fiscal years 2004/05 and 2010/11, responding to growth of the Bangladeshi middle class over the same period. The beverage industry more than doubled during the same period to \$29 million, showing an average growth rate exceeding 8 percent per annum. Demand for processed foods and beverages arises primarily from Bangladesh's growing middle class population of over 30 million, of which 1.5 million reside in Dhaka. Thus, though the sector is small relative to population size, the food processing sector is growing rapidly with prospects for continued growth as Bangladesh's GDP continues to grow.

## General Information:

### Contribution of the Food Processing Industry to the Wider Economy

According to the 2006 Economic Census from the Bangladesh Bureau of Statistics (BBS), there are approximately 246 medium-sized food processing industries employing 19 percent of the industrial manufacturing workforce in Bangladesh, or 8 percent of the total manufacturing labor force. The industry employs 2.45 percent of the country's total labor force and its share in GDP was 2.01 percent in 2010-11. There are numerous small-scale factories and domestic units engaged in food processing which the BBS has not counted.

In 2005-06, the food processing industry contributed over 13 percent to total industrial value in Bangladesh, and ranks third after the Ready-Made Garment (RMG) and gas industries.

**Table 1. Bangladesh: Food and Beverage Industries in Gross Domestic Product**

Fiscal Year (July/June)	2004- 05	2005- 06	2006- 07	2007- 08	2008- 09	2009- 10	2010- 11
Food Manufacturing, million, in USD	1,248	1,328	1,517	1,825	1,867	2,094	2,223
Contribution to GDP by Food Manufacturing, in percent	2.07	2.14	2.22	2.29	2.09	2.09	2.01
Beverage Industry Million, in USD	14	17	18	22	24	26	29
Contribution to GDP by Beverage Industry, in percent	0.02	0.03	0.03	0.03	0.03	0.03	0.03

Source: Calculated from data in the *Statistical Yearbook of Bangladesh, 2011*

Bangladesh exports over \$700 million worth of processed food and beverages; over 60 percent of exports are shrimp and fish products. As the milling industry for rice and wheat is already considered large-scale in Bangladesh, this report focuses on other subsectors.

Like other economically poor and technologically underdeveloped countries, food processing in Bangladesh has traditionally been small-scale, with domestic or family businesses using common processing knowledge for the conservation and handling of raw agricultural commodities to make them usable as food and feed. Although commercial-scale food processing using modern technology — especially for wheat and rice milling, mustard seed crushing, and very limited bread and cookie manufacturing — appeared during the 1960s, the growth of this sector did not gain momentum in terms of operational scale and quality until the mid-1980s. Recently, the defining characteristic of the industry has been the processing of increasingly diverse products to meet the changing demands of the Bangladeshi population.

[The Daily Sun](#) reported on January 7, 2013, that the Bangladeshi middle class is estimated at no fewer than 30 million (20 percent of the population), a number “more than the population of Sweden, Norway, and Denmark.” Another [study](#) by the University of Dhaka indicates 31.3% (or 47 million) of Bangladesh’s 150 million population may now officially be categorized as middle class, with an additional 4 million “rich or affluent.” These estimates stand in contrast to the estimated 10 percent of the population [considered middle class](#) in 2007. Conversely, [World Bank data](#) indicate officially defined poverty has been reduced from half the population in 1996 to under a third today.

**The Current Structure of the Food Processing Industry in Bangladesh**

The current structure of the food processing industries of Bangladesh can be categorized as follows:

**Table 2. Bangladesh: Major Food Processing Subsectors**

Subsector	Components
Dairy Processing	Dairy-based confections; ghee/paneer/curd processing
Edible Oil	Oilseed crushing: mustard, rapeseed and soybean; refining of crude edible oils including soybean and palm
Sugar	Crushing of sugarcane: sugar, molasses; refining of mostly imported raw sugar; sugar-based processed food items, e.g., chocolates and confections
Rice	Flakes, puffed rice, snacks, breads
Wheat	Bread and cookies; noodles/pasta and vermicelli; chapatti/luchi/somocha
Fruit and Vegetable	Fruit juices, fruit-based soft drinks: sauces and ketchup; pickles; potato chips
Tea	
Poultry/Beef	Dressed poultry and beef; processed sausages, nuggets, etc.
Pulses and Spices	

**Dairy Processing Industry**

The average daily consumption of milk and dairy products in Bangladesh is merely 44 milliliters per person per day, against the WHO recommended requirement of 250 milliliters per person per day. The average Bangladeshi dairy farm has 3.5 head of cattle, with very poor average yields of 200-250 liters per 305-day lactation. Industry analysts have linked low herd average yields to the slow pace in culling

of local cows in favor of genetically improved stock, a lack of breeding and veterinary services, and inadequate investment in feed and forage development. According to the [Bangladesh Bureau of Statistics](#) (BBS), domestic milk production was 2.95 million metric tons in fiscal year (July/June) 2010-11 (see Table 3).

**Table 3. Bangladesh: Milk Production, in thousand metric tons**

<b>Fiscal Years (July/June)</b>	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>	<b>2009-10</b>	<b>2010-11</b>
Milk	2,270	2,280	2,650	2,286	2,365	2,950

Source: *Statistical Yearbook of Bangladesh*, 2011

One publicly managed cooperative, Milk Vita (in operation since 1965) and five private-sector companies are currently operating in the collection, transportation, pasteurization and marketing of fluid milk for consumers in urban markets. While UHT processing of milk was introduced with technical assistance from Land O'Lakes in 2002 via the U.S. Department of Agriculture (USDA) feeding and nutrition program, currently only four companies are marketing UHT fluid milk. Several local companies, including a few multinationals, are engaged in the marketing of milk powders that principally depend on imports. Milk powder imports in Bangladesh were 74,000 metric tons, 48,000 metric tons and an estimated 72,000 metric tons in FY 2009, 2010 and 2011, respectively. There are around 100 small-scale dairy processing units in the country.

Against an annual demand of about 3.65 million metric tons of milk, Bangladesh produced 2.95 million tons in 2010-11, with the balance imported in dry milk powder form. Approximately 32 percent is consumed directly as fluid milk, with the rest being processed. Imported milk powders are processed for packaging in cans and aluminum foil packets. Several multinationals, including Nestlè, and joint venture companies are marketing dry milk powder to consumers. Sixty percent of this product is consumed at home and in the HRI sector. The remaining 40 percent is further processed to make milk-based confections and other products such as ghee (butteroil), cheese, butter, and curd. At least 200 small-scale confectionary companies with diversified product lines operate retail chains targeting different customer segments.

Manufacturing of milk-based value added products in Bangladesh is very labor intensive; mechanization is fairly limited. The major strength of this sector is that milk-based confections and related products are part of Bangladeshi culture.

### **Rice Processing Industry**

Rice processing in Bangladesh includes parboiling, dehusking, debranning and more recently sorting and polishing (yielding ready-to-cook rice). Further processing of rice, accounting for less than 10 percent of the country's 34 million metric tons of annual consumption, is focused on downstream products at small-scale units and family-owned cottage industries. The most common value-added rice products include puffed rice and flaked rice, which are used as a supplement to boiled rice.

In recent years the increased availability of low-priced rice has led to commercial level investment by new enterprises as well as by industry groups already in the food processing sector, who have

diversified their processing capabilities to include rice processing for flakes, puffed rice, snacks, and bakery items.

Medium- and high-quality parboiled rice and both imported and local varieties of aromatic rice are now available in Bangladesh retail outlets, with increasingly attractive packaging and brand names.

However, there are currently no market data available on demand or production of these products.

### **Wheat Processing Industry**

**Bread and Cookies:** According to BBS data, bread and cookie (“biscuit”) production was 100,305 metric tons in 2010-11. Over 100 manufacturers and 4,500 traditional factories produce bread and cookies in Bangladesh. Market size of the automated bread and cookie processing industry is estimated at approximately \$56.5 million, excluding traditional bakery products. According to the president of the Bangladesh Bread and Biscuit Manufacturing Association (BABMA), this industry is growing at an annual rate of over 15 percent.

Concurrent to the growth in the domestic industry, the export market is also growing. Some 12 factories in Bangladesh are producing high energy biscuits with the support of various donors and development organizations, mainly to support government school feeding programs. The table below details market share in this subsector by company.

**Table 4. Bangladesh: Market Shares of Bakery Companies, in percent**

<b>Firm</b>	<b>Market Share</b>
Olympic	16
Al-Amin	10.1
Pran	6
Nabisco	5
Globe	>5
Danish	>5
Romania	>5
New Olympia	>5

Industry sources opine that there is still a large gap between demand and supply, especially for higher quality processed cookies. This demand gap has led to increased imports of cookies from India, Malaysia, Indonesia and other Asian countries.

The food safety procedures adopted by the new, large-scale factories are extensive, though the situation in older, traditional factories is not satisfactory.

**Noodles/Pasta and Vermicelli:** In the past noodles/pasta and vermicelli were imported into Bangladesh from Pakistan and India. During the 1970s and 1980s, small-scale production of these wheat-based dry food items started to grow. Gradually, the growth of this sector has kept pace with the growing demand of these products (except for very high quality pasta), concurrent with lifestyle changes in the urban population. There are half a dozen specialized manufacturers of these products, with established brand names (product lines) varying by targeted market segment.

The growth of this industry has picked up sharply during the past decade, with the large flour milling companies installing modern facilities for large-scale production of these products. There are currently no market data available on demand for or production of these products.

**Chapatti/Luchi/Somocha:** These products are the most recent additions to processed food offerings in Bangladesh, originally being offered frozen and imported from Malaysia. In the last two years, several Bangladeshi companies have started production and marketing of these products (some firms, e.g., Golden Harvest, have exported as well). These efforts have been successful, as they align with the preferences of the growing number of working women in fast-paced urban areas. There are currently no market data available on demand for or production of these products.

### Oilseed Processing and the Edible Oil Refining Industry

Bangladesh consumes approximately 1.5 million metric tons of edible oil, with 80 percent of this consumption covered via imports. The table below offers a market snapshot.

**Table 5. Bangladesh: Edible Oil Market, in metric tons**

Total Edible Oil Consumption	1,500,000
Total Imports of Edible Oil	900,000
Crude Palm Oil Imports	600,000
Degummed Soybean Oil Imports	300,000
Refined Edible Oil Imports	300,000

Source: Bangladesh Bureau of Statistics

Up until the 1970s, Bangladeshi consumers generally consumed rapeseed and mustard oil. These oilseeds were crushed and processed in traditional animal-driven “ghanies” or in a limited number of mechanical oil expellers. As demand for edible oil began grew, Bangladesh entered a phase of more advanced edible oil refining. Initially soybean oil refining plants, and later palm oil refining plants, started to operate. The first plants (85-90 total units) were small in capacity, in the range of 30 to 60 metric tons’ daily capacity. Since 2000, about 20 newer and much larger edible oil refineries equipped with dry fractionation plants have begun operating. Production capacity at these newer refineries varies between 300 and 1000 metric tons per day.

In addition to about 250,000 metric tons of domestically produced mustard seed, Bangladesh imports roughly 200,000 metric tons of rapeseed for crushing. A few large industrial groups have recently established solvent extraction capabilities, significantly increasing the country’s crushing capacity. For example, in 2003 City Group established a large oilseed extraction plant near Dhaka with 1,000 metric ton per day capacity and a state-of-the-art extraction facility. This plant is currently crushing 50 percent soybeans, 35 percent mustard and rapeseed and 15 percent sunflower seeds. Consequently, Bangladesh is also importing around 200,000 metric tons of soybeans annually, mainly from Argentina and Brazil and, occasionally, the United States.

Although 80 percent of edible oils are marketed for the lower-middle to low-income population, the remaining 20 percent is marketed branded in sealed plastic bottles by as many as 25 companies.

Bottling of soybean oil started in 1998, with very low demand for bottled products (2-3 percent of the

total annual consumption). However, demand has risen sharply since 2004-05. New edible oil brands are hitting the market, as bottling gives oil refining and packaging firms higher margins and the ability to ward off price hikes in unpackaged oils.

### **Fruit and Vegetable Processing**

In 2010-11, Bangladesh produced 34 million metric tons of fresh fruit (mainly bananas, mangos, jackfruit and guavas) and 10.5 million metric tons of fresh vegetables (mainly potatoes, tomatoes, eggplant, water gourds, pumpkins and assorted leafy vegetables). As much as 30 to 35 percent of Bangladesh's fruits and vegetables are wasted due to lack of processing and preservation facilities.

Despite the gradual development of preservation and industrial processing facilities, so far only approximately 2 percent of fruits and a negligible percentage of vegetables are processed into value-added products. Those that are processed include a variety of products such as juices and concentrates, pulp, jams and jellies, pickles and chutneys. In addition, fresh fruits and vegetables are processed (graded, chilled and packaged) for the export market, though in negligible quantities. Mangos, guavas, tomatoes and potatoes are the main fruits and vegetables processed for both domestic consumption and exports (often targeting the Bangladeshi ethnic community abroad).

Simple processing of fruits and vegetables such as pickling, sun-drying or canning has historically been practiced in Bangladesh as a household activity. Industrial processing of fruit and vegetables has been present in Bangladesh for only about two decades. Industry sources claim that in the last 10 years, the industry has grown at an annual rate of 12 percent, with significant development of modern facilities. Besides the huge number of small-scale fruit processing enterprises, as many as 10 industrial groups have installed modern fruit processing plants and 20 other small- and medium-size fruit and vegetable processing entities are in operation.

### **Sugarcane Processing and Raw Sugar Refineries**

Bangladesh was well known for high-quality sugar as early as the 16th century. At that time, British-ruled India exported large quantities of sugar from Bengal every year. The volume was approximately 820,186 *mounds* (1 mound = 37.65 kg) in 1795 and 3,324,168 mounds in 1805. In 1947, East Pakistan inherited only a few sugar mills, with a total cane crushing capacity of approximately 4,350 metric tons. By 1956, five new mills had been established and production stood at 26,000 metric tons.

Today, the Bangladesh sugarcane crushing industry comprises 15 government-owned sugar mills with an estimated total annual production capacity of about 250,000 tons. These mills are managed by the state-run Bangladesh Sugar and Food Industries Corporation (BSFIC). In 2010-11, Bangladesh's total sugarcane production was 8.1 million metric tons, of which only 3 million tons were crushed in sugar mills and the rest went to private, small-scale molasses processors. Bangladesh ranks lowest in the world in sugarcane yields (15 metric tons/hectare) and the recovery of sugar from cane is also the lowest (7.4 percent) among the world's sugarcane producing countries.

Against an annual sugar consumption of 1.3 million metric tons, Bangladeshi sugar mills produced only 227,000 tons in 2010-11, with 1.1 million metric tons of raw and refined sugar being imported.

Facilities to refine raw sugar are a recent addition to the country's food processing industry. Since its inception over the past 10 years, raw sugar refining capacity in Bangladesh has exceeded 20 million

tons, all in the private sector. In October 2012, the government lifted the ban on sugar exports in the face of mounting pressure from private refiners who were left with idle processing capacity. Since the ban was lifted, the Bangladesh Ministry of Commerce has granted permission to export more than 200,000 metric tons of sugar to countries in Europe and Africa as well as to India. The BSFIC plans to export 50,000 metric tons of locally-crushed sugar to Europe under the region's duty-free and quota-free scheme during the current fiscal year.

## **Tea**

The first commercial tea plantation in Bangladesh was established in 1857 in Sylhet, the northeast region of the country. During the 1947 India-Pakistan partition, Bangladesh (then East Pakistan) boasted 103 tea plantations, covering 26,734 hectares and producing 18.36 million kilograms annually, with a yield of about 639 kilograms per hectare. Domestic consumption was around 13.64 million kilograms until 1955. At that point, consumption increased rapidly, compelling the government in 1961 to impose a mandatory 3 percent per annum expansion of tea area. By 1970, tea area stood at 42,658 hectares, and production had increased to 31.38 million kilograms. Currently, Bangladesh produces 62.50 million kilograms of tea on 163 tea plantations, with 116 tea processing factories in operation.

According to government data, 106 of these tea plantations have been identified as uneconomic. At its current level, Bangladesh contributes 1.40 percent of world tea production and shares 0.10 per cent of global tea exports.

Domestic tea consumption in Bangladesh has been increasing at an annual rate of about 13 percent, while production has been increasing at about 1 percent per annum during the last decade. Exports have drastically declined to the current 9 percent of total production, down from 33 percent in 2000-01.

Bangladesh could not utilize the duty free export quota to its fullest extent, as increasing internal demand pushed up price levels in the local auction market and discouraged exports. Other tea producing countries such as India, Sri Lanka, Indonesia, Vietnam and Kenya hold relative advantages over Bangladesh. Namely, these countries supply higher quality teas at lower prices, resulting in an extremely competitive export market. Meanwhile, Bangladeshi industry sources fear that the country's exportable surplus may be exhausted in the near future, and the country may turn into a net tea importing country by 2016 if the present trend continues.

## **Poultry, Meat and Fish Processing**

BBS data indicate that in 2010-11 Bangladesh produced approximately 2 million metric tons of meat, including poultry and livestock. In Bangladesh, livestock and poultry are brought live to markets and slaughtered on the spot; the meat is sold fresh and cooked at home prior to consumption. Slaughter in open air markets results in extremely unhygienic practices for disposing of blood, viscera and other wastes.

Meat processing in industrial plants is a very recent addition to the food processing industry in Bangladesh. Only one modern beef processing facility and ten poultry processing facilities are in operation. Combined, these facilities process less than one percent of total Bangladeshi meat production. They do, however, process meat into ready-to-cook nuggets, sausages, and other prepared products. Meat processed in these facilities is marketed through fast food shops, superstores and convenience stores.

Bangladeshis are traditionally a fish-eating people. In 2010-11, around 3.1 million metric tons of fish was caught in the country, comprising 2.5 million metric tons of freshwater fish and 0.6 million metric tons of saltwater fish. Open air sun-drying to for dried fish and fish meal is a traditional practice in Bangladesh. Modern fish processing is done almost entirely for the export market, with shrimp processing holding almost 80 percent of that segment. There are approximately 150 modern shrimp processing facilities in the country, out of which about 70 are under regular surveillance by EU member state and U.S. Food and Drug Administration (FDA) officials to ensure food safety requirements are met. In July/June fiscal year 2011-12, Bangladesh exported \$598 million worth of fish and seafood, with shrimp contributing \$472 million of the total.

### **Pulses and Spices**

Locally produced pulses (lentil, mung bean and chickpeas) and spices (turmeric, coriander, and chili) are traditionally processed in small, cottage-industry stone mills (*chakki*). However, major industrial groups are extending their product lines to include mechanical processing of pulses and spices in semi-automatic and automatic mills. Branded products are being marketed in attractive consumer packages. While modern industries procure spices from the local market, 60 percent of pulses processed are imported. Spices are processed into ready-to-use powders. Several industry groups are processing spices and marketing them in attractive consumer packaging.

In 2010-11, Bangladesh produced 224,000 metric tons of pulses and imported another 490,000 metric tons.

### **Challenges in the Bangladesh Food Processing Industry**

The food processing industry in Bangladesh faces acute problems of low capacity utilization, technological obsolescence and marketing shortfalls. Quality of the finished product is generally very poor due to the high fluctuations in raw material quality and lack of efficient technologies and trained manpower. Due to the high cost of energy and critical power supply problems, uncertainty in the availability of adequate quantities of raw produce for processing purposes, inadequate and expensive cold chain facilities and varying requirements for processing conditions from one raw material to another, the industry is struggling.

There is no organized and systematic effort from the industry itself, or from government regulatory bodies, to maintain food safety standards and hygiene throughout the entire process, from bringing the raw commodity to the facility to marketing the finished product.

The industry is also seriously deprived of research and development (R&D) support to overcome technical difficulties and develop more efficient processes and new products. Increased R&D could help the industry become more economically sustainable in the domestic market and more competitive in the international market.

At its current state of development, the bulk of the Bangladesh food processing industry is unable to meet the food standards and safety requirements of the international market (the only exception is

shrimp, due to EU and U.S. FDA intervention).

### **Quality Control and Standards**

As mentioned above, the quality of raw materials used in the food processing industry is very poor, due to pesticide and chemical contamination, inappropriate production technologies, transportation shortfalls, and inadequate storage. An effective quality control system for ensuring the food safety of final products is an absolute necessity in Bangladesh.

The Bangladesh Standards and Testing Institute (BSTI) has formulated standards for all processed food items currently produced in or imported into Bangladesh. These standards, in general, cover raw materials and their quality parameters, hygienic conditions under which products are manufactured, and packaging and labeling requirements. However, the implementation of these standards has been slow.

One problem behind this slow implementation is the fact that there are as many as 13 government ministries and departments responsible for ensuring food safety, creating confusion over applicable regulatory requirements and authority.

### **Select References**

- [Bangladesh Bureau of Statistics](#)
- [Bangladesh Food and Sugar Industries Corporation](#)
- [Bangladesh Tea Board](#)
- [Practitioner Hub: Bangladesh Agribusiness](#)